ABSTRACT OF THE DISCLOSURE

A p-type semiconductor includes a host material 100 which is a semiconductor, an acceptor element 110 and a localized band formation element 120. Here, the acceptor element 110 is doped to the host material 100 and has fewer valence electrons than valance electrons of at least one of the elements which compose the host material 100; the localized band formation element 120 is doped to the host material 100, is isovalent with at least one of the elements which compose the host material 100 and has smaller electronegativity than the electronegativity of the element(s), and forms the localized band which activates holes of an acceptor level.